

INVESTIGATOR'S ANNUAL REPORT

National Park Service

All or some of the information provided may be available to the public

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|---|---|------------------------------------|-----------------------------|-------------------|------------------------------------|-----------------------------|-------------------|
| Reporting Year: 1998 | Park: Shenandoah NP | | | | | | |
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| Name: Dr. Robert H. Gardner | Phone: (301)689-7125 | Email: n/a | | | | | |
| Permit#: SHEN1998234 | | | | | | | |
| Park-assigned Study Id. #: unknown | | | | | | | |
| Project Title: Forest Vegetation, Watershed Topography, And Nitrogen Export In The Shenandoah National Park | | | | | | | |
| Permit Start Date: Jan 01, 1998 | Permit Expiration Date Jan 01, 1999 | | | | | | |
| Study Start Date: Jan 01, 1998 | Study End Date Jan 01, 2000 | | | | | | |
| Study Status: Completed | | | | | | | |
| Activity Type: Research | | | | | | | |
| Subject/Discipline: Ecology (Aquatic, Marine, Terrestrial) | | | | | | | |
| Objectives: 1. To nondestructively sample forest overstory, understory, and shrub vegetation within five watersheds in the Shenandoah National Park that have previously been monitored for hydrologic and nitrogen output.;2. To characterize watershed vegetation differences among slope aspects, slope positions, and bedrock geology. | | | | | | | |
| Findings and Status: During 1998, the vegetation in four watersheds was sampled: Paine Run, White Oak Run, Piney River and Staunton River. Number of vegetation plots per watershed were 98, 48, 54, and 50 respectively. For Paine Run the entire watershed was sampled on a grid (400m interval), while other watersheds were sampled using transects on representative topographic aspects and slope positions. Vegetation sampling focused on canopy and subcanopy layers, although further information on regeneration and coarse woody debris were collected for Paine Run. Paine Run live basal area averages 16.6m ² /ha, with 9.32 being oak. Without extrapolation to the entire watershed, Piney River basal area averages 32.5 m ² /ha(8.0 oak) and White Oak Run 22.7 m ² /ha (10.5 oak). Data for Staunton River is still being analyzed. We plan to sample Deep Run in 1999, as well as obtain data from N. Fork Dry Run from Dr. H.H. Shugart (University of Virginia) for comparative purposes. Currently, methods are being analyzed for extrapolation of transect data to the watershed scale using these data from SNP along with data from other watersheds in Virginia, Maryland, and Pennsylvania. Data on oak basal area will be used in a model of watershed nitrogen export as a function of gypsy moth defoliation. | | | | | | | |
| For this study, were one or more specimens collected and removed from the park but not destroyed during analyses? No | | | | | | | |
| Funding provided this reporting year by NPS: 0 | Funding provided this reporting year by other sources: 20000 | | | | | | |
| Fill out the following ONLY IF the National Park Service supported this project in this reporting year by providing money to a university or | | | | | | | |

| college | |
|-------------------------------------|--|
| Full name of college or university: | Annual funding provided by NPS to university or college this reporting year: |
| University of Maryland | 0 |